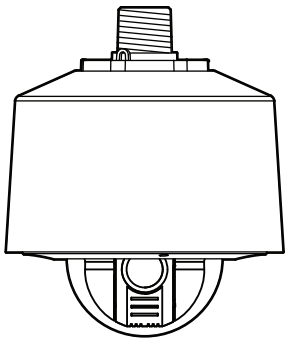
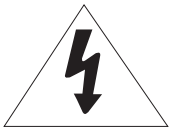


x20 HD-SDI PTZ Outdoor
All-In-One Camera

User's Manual

Ver. 0.5 / 2011.03

Safety Information



CAUTION

RISK OF ELECTRIC SHOCK.
DO NOT OPEN.

CAUTION:

TO REDUCE THE RISK OF ELECTRIC SHOCK, DO NOT REMOVE COVER (OR BACK) NO USER SERVICEABLE PARTS INSIDE. REFER SERVICING TO QUALIFIED SERVICE PERSONNEL.

Warning

This symbol indicates that dangerous voltage consisting a risk of electric shock is present within this unit.

Precaution

This exclamation point symbol is intended to alert the user to the presence of important operating and maintenance (servicing) instructions in the literature accompanying the appliance.

WARNING

To prevent damage which may result in fire or electric shock hazard, do not expose this appliance to rain or moisture.

WARNING

2. Be sure to use only the standard adapter that is specified in the specification sheet. Using any other adapter could cause fire, electrical shock, or damage to the product.
3. Incorrectly connecting the power supply or replacing battery may cause explosion, fire, electric shock, or damage to the product.
4. Do not connect multiple cameras to a single adapter. Exceeding the capacity may cause abnormal heat generation or fire.
5. Securely plug the power cord into the power receptacle. Insecure connection may cause fire.
6. When installing the camera, fasten it securely and firmly. A falling camera may cause personal injury.
7. Do not place conductive objects (e.g. screw drivers, coins, metal things, etc.) or containers filled with water on top of the camera. Doing so may cause personal injury due to fire, electric shock, or falling objects.
8. Do not install the unit in humid, dusty, or sooty locations. Doing so may cause fire or electric shock.
9. If any unusual smells or smoke come from the unit, stop using the product. In such case, immediately disconnect the power sorce and contact the service center. Continued use in such a condition may cause fire or electric shock.
10. If this product fails to operate normally, contact the nearest service center. Never disassemble or modify this product in any way.
11. When cleaning, do not spray water directly onto parts of the product. Doing so may cause fire or electric shock.

Precautions

Operating

- Before using, make sure power supply and others are properly connected.
- While operating, if any abnormal condition or malfunction is observed, stop using the camera immediately and then
- contact your Special dealer.

Handling

- Do not disassemble or tamper with parts inside the camera.
- Do not drop or subject the camera to shock and vibration as this can damage camera.
- Care must be taken when you clean the clear dome cover. Especially, scratch and dust will ruin your quality of camera.

Installation and Storage

- Do not install the camera in areas of extreme temperature, which exceed the allowable range.
- Avoid installing in humid or dusty places.
- Avoid installing in places where radiation is present.
- Avoid installing in places where there are strong magnetic fields and electric signals.
- Avoid installing in places where the camera would be subject to strong vibrations.
- Never expose the camera to rain and water.

Important Safety Instructions

1. **Read these instructions.** - All these safety and operating instructions should be read before the product is operated.
2. **Keep these instructions.** - The safety, operating and use instructions should be retained for future reference.
3. **Heed all warnings.** - All warnings on the product and in the operating instructions should be adhered to.
4. **Follow all instructions.** - All operating and use instructions should be followed.
5. **Do not use this apparatus near water.** - For example: near a bath tub, wash bowl, kitchen sink, laundry tub, in a wet basement; near a swimming pool; etc.
6. **Clean only with dry cloth.** - Unplug this product from the wall outlet befor cleaning. Do not use liguid cleaners.
7. **Do not block any ventilation openings. Install in accordance with the manufacturer's instructions.** - Slots and openings in the cabinet are provided for ventilation, to ensure reliable operation of the product, and to protec it from over-heating. The openings should never be blocked by placing the product on bed, sofa, rug or other similar surface. This product should not be placed in a built-in installation such as a bookcase or rack unless proper ventilation is provided and the manufacturer's unstructions have been adhere to.
8. **Do not install near any heat sources such as radiators, heat registers, or other apparatus (including amplifiers) that produce heat.**
9. **Do not defeat the safety purpose of the polarized or grounding-type plug. A polarized plug has two blades with one wider than the other. A grounding type plug has two blades and a third grounding prong. The wide blade or the third prong are provided for your safety. If the provided plug does not fit into your outlet, consult an electrician for replacement of the obsolete outlet.**
10. **Protect the power cord from being walked on or pinched particularly at plugs, convenience receptacles, and the point where they exit from the apparatus.**
11. **Only use attachments/accessories specified by the manufacturer.**
12. **Use only with cart, stand, tripod, bracket, or table specified by the manufacturer, or sold with the apparatus. When a cart is used, use caution when moving the cart/apparatus combination to avoid injury from tip-over.**

13. **Unplug this apparatus during lightning storms or when unused for long periods of time.**
14. **Refer all servicing to qualified service personnel. Servicing is required when the apparatus has been damaged in any way, such as power supply cord or plug is damaged, liquid has been spilled or objects have fallen into the apparatus, the apparatus has been exposed to rain or moisture, does not operate normally, or has been dropped.**

Disposal of Your Old Appliance

1. When this crossed-out wheel bin symbol is attached to a product it mean the product is covered by the European Directive 2002/96/EC.

2. All electrical and electronic products should be disposed of separately form the municipal waste stream via designated by the government or the local authorities.

3. The correct disposal of your old appliance will help prevent potential negative consequences for the environment and human health.

4. For more detailed information about disposal of your old appliance, please contact your city office, waste disposal service or the shop where you purchased the product.

FC CE

This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to part 15 of the FCC Rules.
These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment.
This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interferenece at his own expense.

Contents

4 Precautions

1. Introduction

6 Product & Accessories
7 Parts Name & Functions_Appearance
8 Parts Name & Functions_Inside

2. Installation

9 Installation
13 DIP Switch Setup
15 Cabling

3. OSD Menu

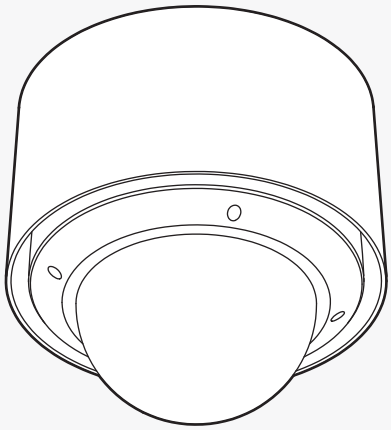
17 Check Points before Operation
18 OSD - ROOT MENU & SYSTEM INFORMATION
19 OSD - MOTION SETUP
20 OSD - FUNCTION SETUP > PRESET SETUP
21 OSD - FUNCTION SETUP > SCAN SETUP
22 OSD - FUNCTION SETUP > PATTERN SETUP
23 OSD - FUNCTION SETUP > GROUP SETUP
25 OSD - CAMERA SETUP > WB SETUP
26 OSD - CAMERA SETUP > AE SETUP
27 OSD - CAMERA SETUP > OTHER SETUP
28 OSD - SYSTEM SETUP

4. Specification

29 Dimensions

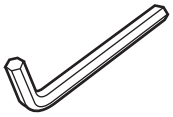
1 Introduction - Product & Accessories

Product

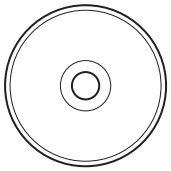


All-In-One Camera

Accessories



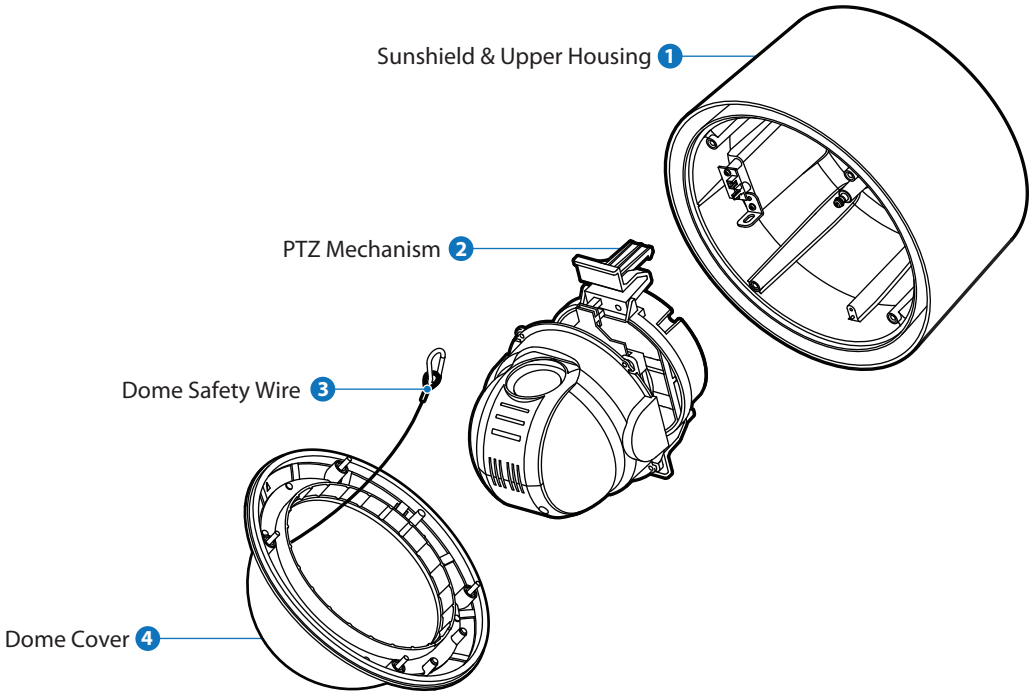
Hexagonal Wrench



Manual CD

Quick Manual

1 Introduction - Part Name & Functions_Appearance



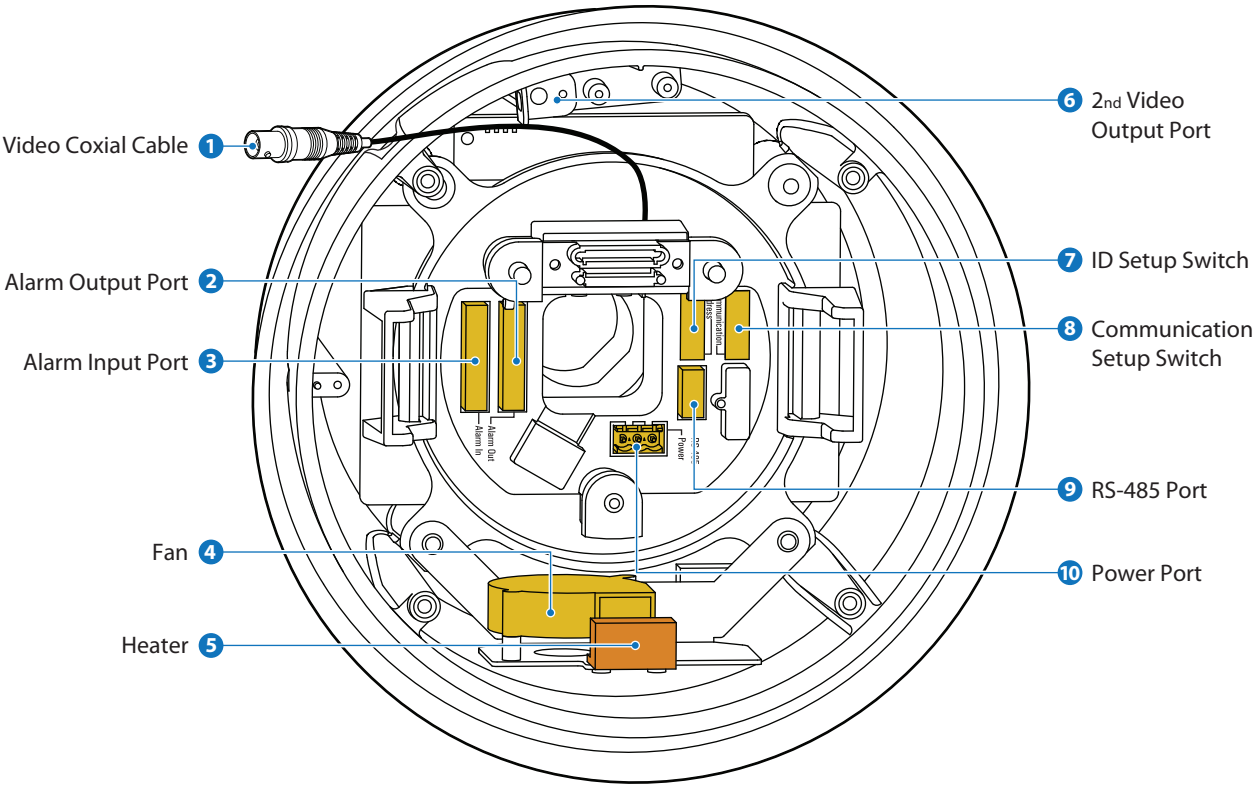
1 Sunshield & Upper Housing
Sunshield protect bubble dome cover from the sun rays and rain fall. In the sunshield, there is the upper housing which will contain accommodate PTZ mechanism. Also, the upper housing will be connected to both mounting brackets and dome cover.

2 PTZ Mechanism
Control the PTZ operations of the camera.

3 Dome Safety Wire
Prevents the dome cover from falling.

4 Dome Cover
Do not detach protection film from dome cover before finishing all installation process to protect dome cover from scratches or dust. In the dome cover, there are fan and heater to remove moisture on the bubble dome.

1 Introduction - Part Name & Functions_Inside



1 BNC Coxial Cable
Connects to video output device such as monitor using the BNC coaxial cable.

2 Alarm Output Port
It connects to the alarm lights, siren or lamps, and it is activated according to the OSD menu or 'Setup' on the Web -viewer setting.

3 Alarm Input Port
It connects to IR sensor, IrDA sensor or door switch. If the sensor is activated, it can activate to move camera to the specific angle and to connect the alarm device.

4 Fan
Defrosts the dome cover and removes moisture.

5 Heater
Defrost the dome cover in a low temperature by increasing the internal temperature of the housing.

6 2nd Video Output Port
Video out check the screen during installation.

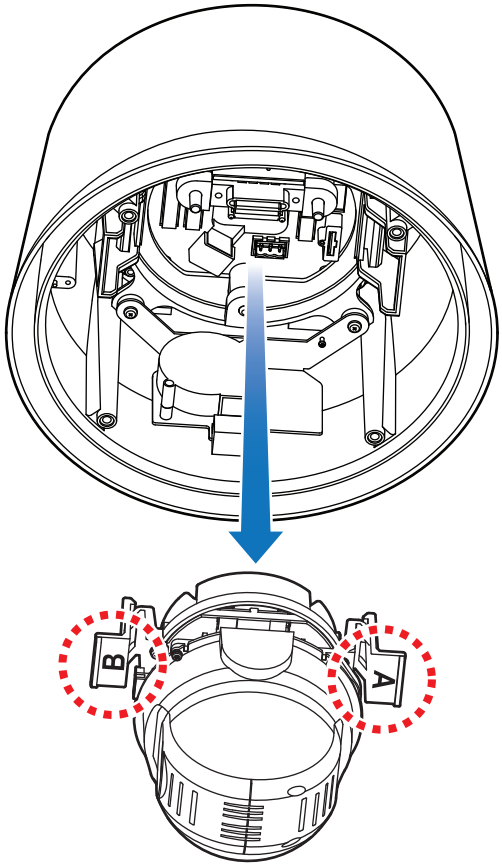
7 ID Setup Switch
Specify the camera ID.

8 Communication Setup Switch
Set the transfer rate and protocols.

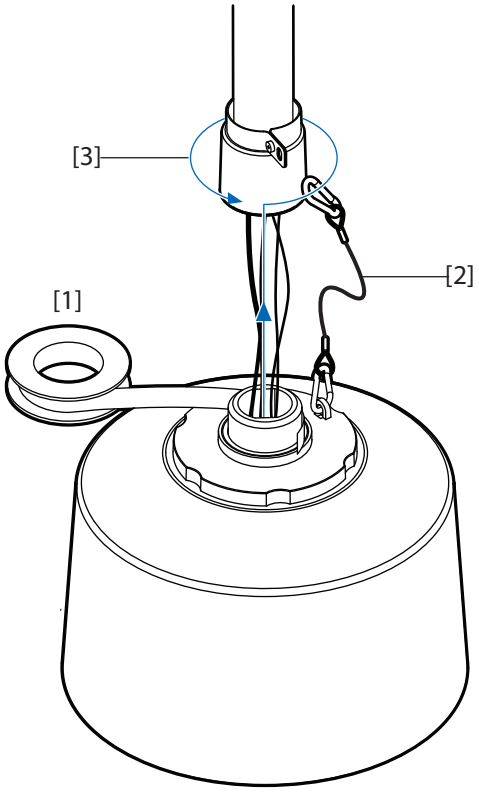
9 RS-485 Port
Used for RS-485 communications.

10 Power Port
Connect the power source here.

2 Installation - Installation

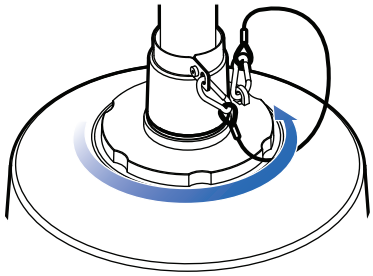


5 You have to detach the PTZ mechanism from the upper housing to plug the connector of cable. When detach PTZ mechanism, pressing down and holding up the black handles in both sides of PTZ mechanism.

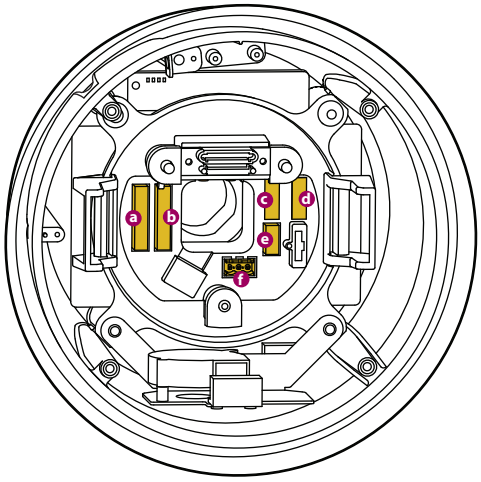


6 [1] Wind the water proof tape on the pipe of upper housing.
[2] Hooking the safety wire on the hole of pipe.
[3] Attach the upper housing to wall mount bracket by turning it at least seven turns.

※ To fix the upper body orientation, turn the handle of double nuts to clockwise tightly.



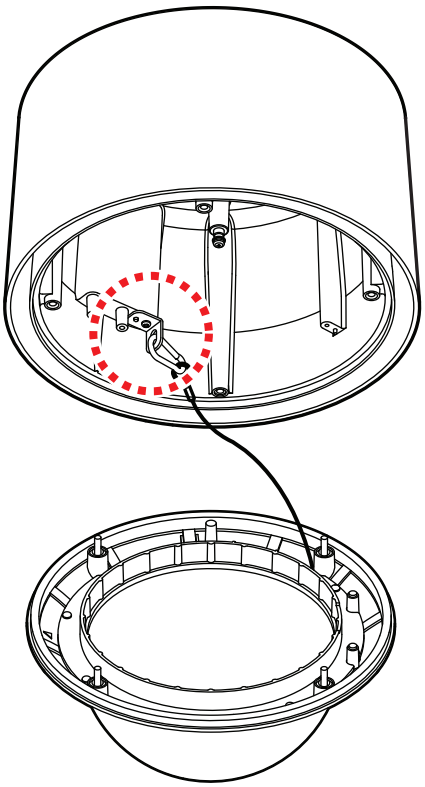
2 Installation - Installation



7 Connect each of the following cables to the applicable port and set the DIP switch to configure the camera ID, communication protocol.

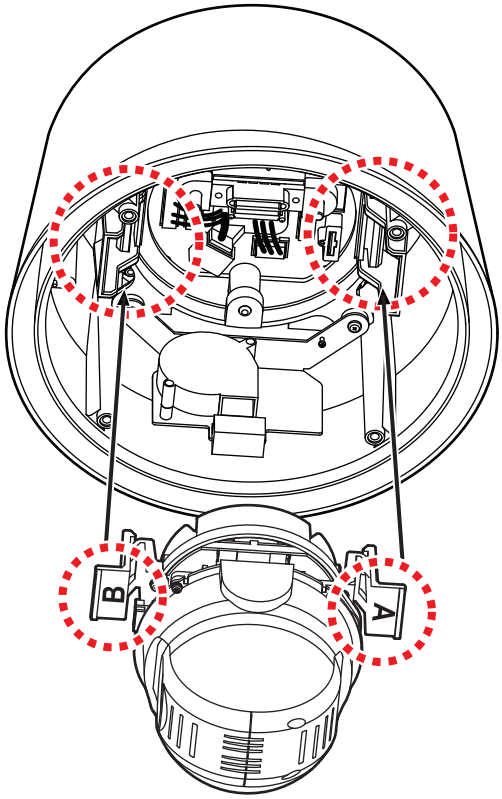
- a Alarm Output Port
- b Alarm Input Port
- c DIP Switch for Camera ID Setup
- d DIP Switch for Communication
- e RS-485 Port
- f Power Port

※ Refer to 13, 14 page for detail DIP switch setting.
※ Refer to 15, 16 page for detail cablings.

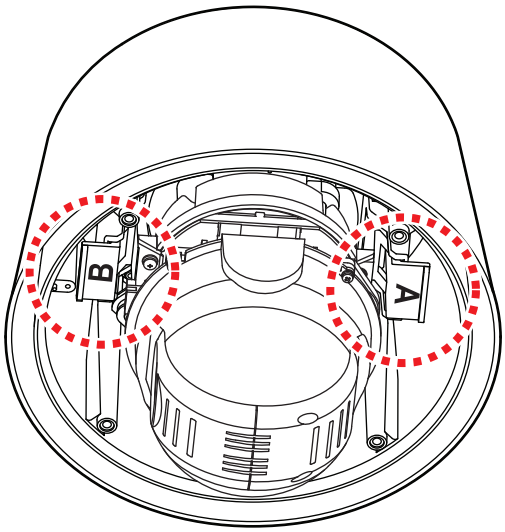


8 Make sure that the dome cover is connected firmly to the safety wire.

2 Installation - Installation

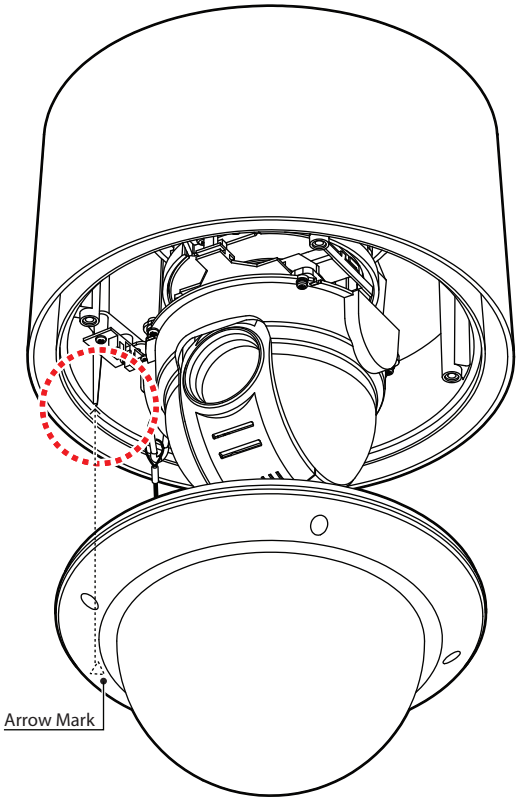


7 Plug the connector of cable from junction box into properly. After checking the orientation of one touch connector in the upper housing, press the PTZ mechanism into hook in the upper housing.

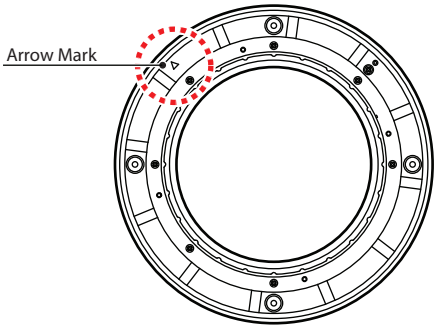


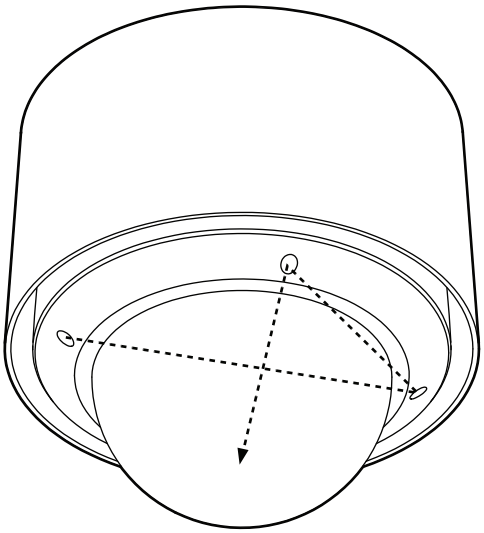
8 To lock the PTZ mechanism to the upper housing, press the two black handles till it sounds snap.

2 Installation - Installation



9 Close the dome cover. Care must be taken to locate dome cover by matching the 'Arrow Mark'.





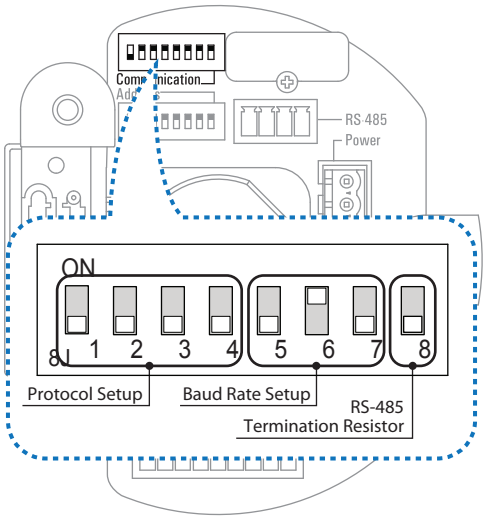
10 Tighten four screws on the dome cover in sequence as shown in the picture.

※ To maintain the best sealing, the torque of each screw must be in the range between 0.5 ~ 1.0 N·m(0.3 ~ 0.73 lbf·ft).

2 Installation - DIP Switch Setup

※ Before installing the camera, you should set the DIP switch to configure the camera ID, communication protocol.

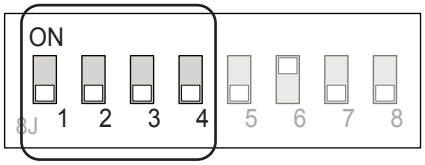
Interface Board



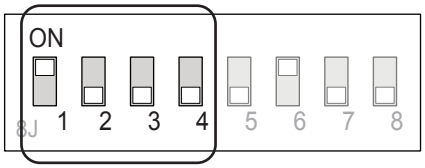
1. Communication Protocol Setup

Select the appropriate protocol with DIP switch combination.

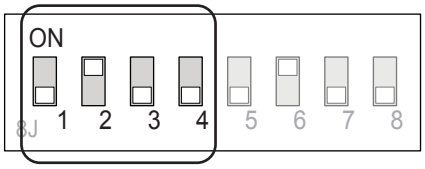
1 Auto - *Factory Default*



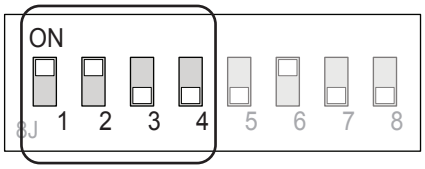
2 PELCO-D



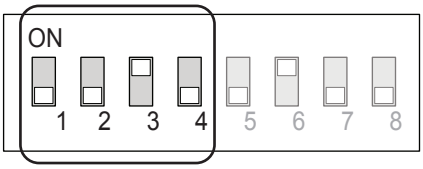
3 PELCO-P



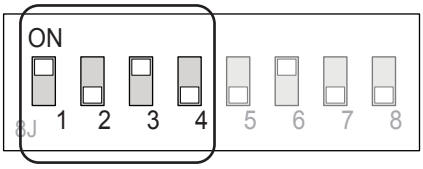
4 SAMSUNG



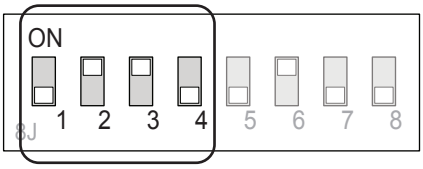
5 Panasonic



6 GE(Kalatel)



7 AD(American Dynamics)



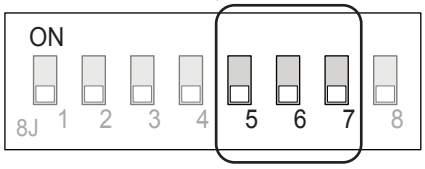
- If you set the protocol as 'Auto' protocol, camera will automatically recognize PELCO-D or PELCO-P protocol.
- If you want to control using DVR or system keyboard, their protocol must be identical to camera. Otherwise, you can not control the camera.
- If you change camera protocol by changing DIP switch, the change will be effective after you reboot the camera.

2 Installation - DIP Switch Setup

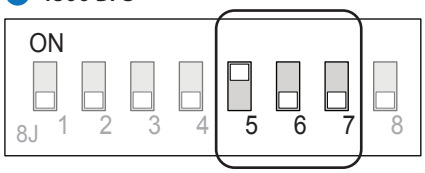
2. Communication Baud Rate Setup

Select the appropriate baud rate with DIP switch combination.

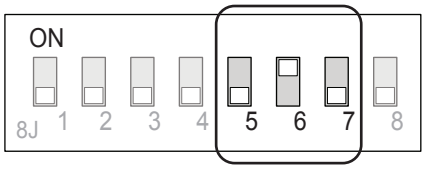
1 2400 BPS - *Factory Default*



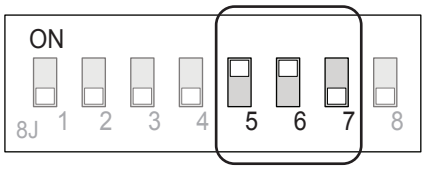
2 4800 BPS



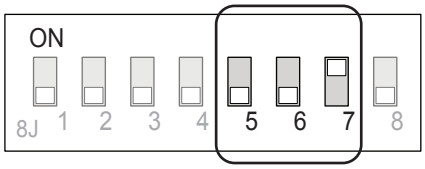
3 9600 BPS



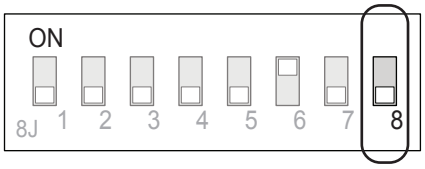
4 19200 BPS



5 38400 BPS



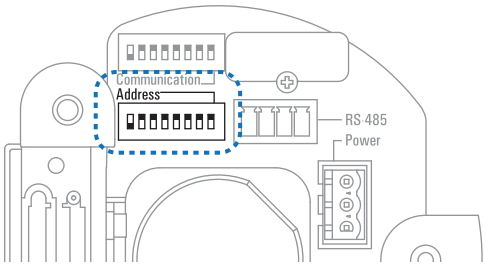
3. RS-485 Termination Resistor



- Pin 8 is used for on/off of RS-485 termination.
- Normally, it must be off state.
- Especially, when you have trouble with long daisy chain style connection, turn on this termination switch of the last camera.

4. Camera ID Setup

Interface Board

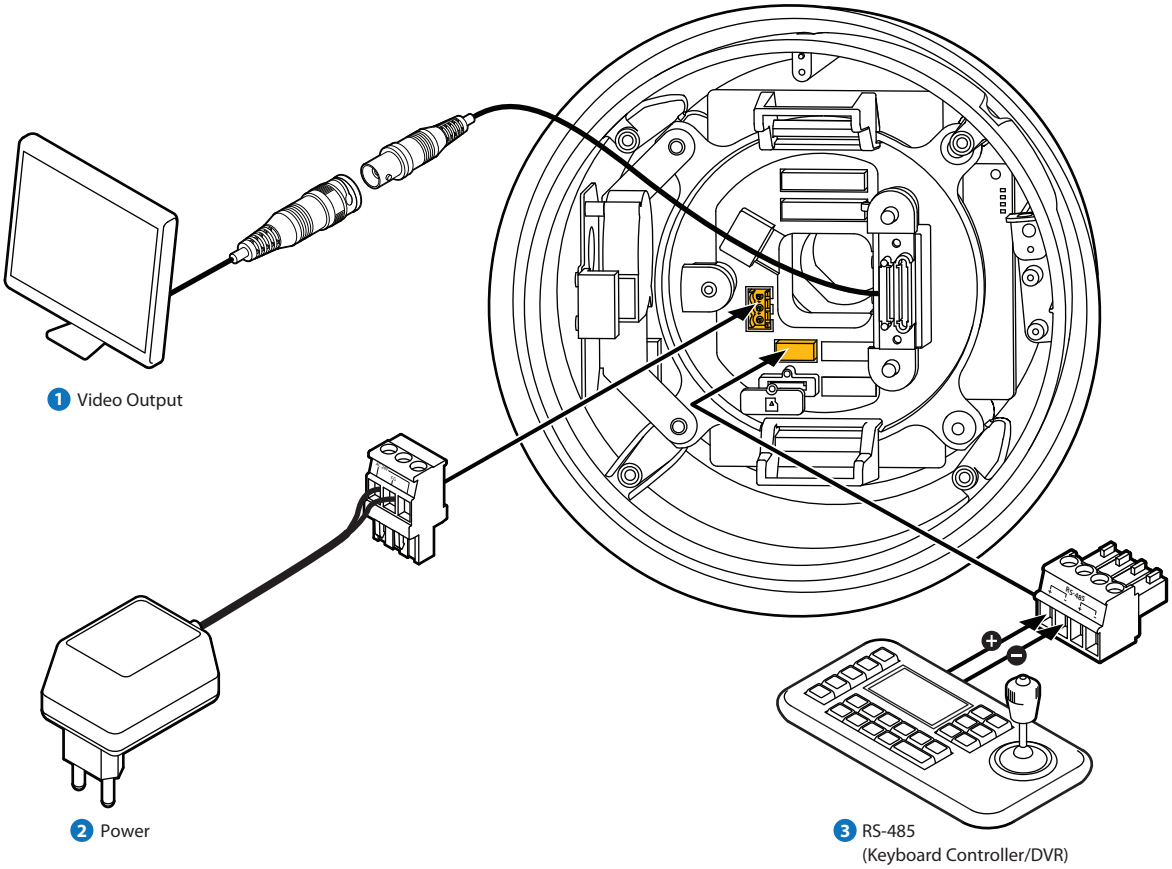


ID number of camera is set using binary number.
The example is shown below.

Pin	1	2	3	4	5	6	7	8
ID Value	1	2	4	8	16	32	64	128
ex) ID=5	on	off	on	off	off	off	off	off
ex) ID=10	off	on	off	on	off	off	off	off

- If you want to control a certain camera, you must match the camera ID with 'CAM ID', setting of DVR or keyboard controller.
- ID number of the camera is set using binary number.
- The range of ID is 0~255.
- Factory default of camera ID is 1.
- Camera ID will be effective without rebooting the camera.

2 Installation - Cabling



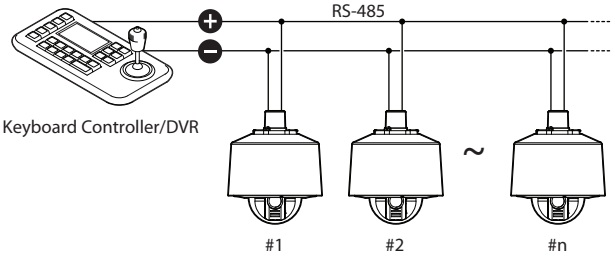
1 Video Output
Connects to video output device such as monitor using the BNC coaxial cable.

2 Power Connection
Please, check the voltage and current capacity of rated power carefully.

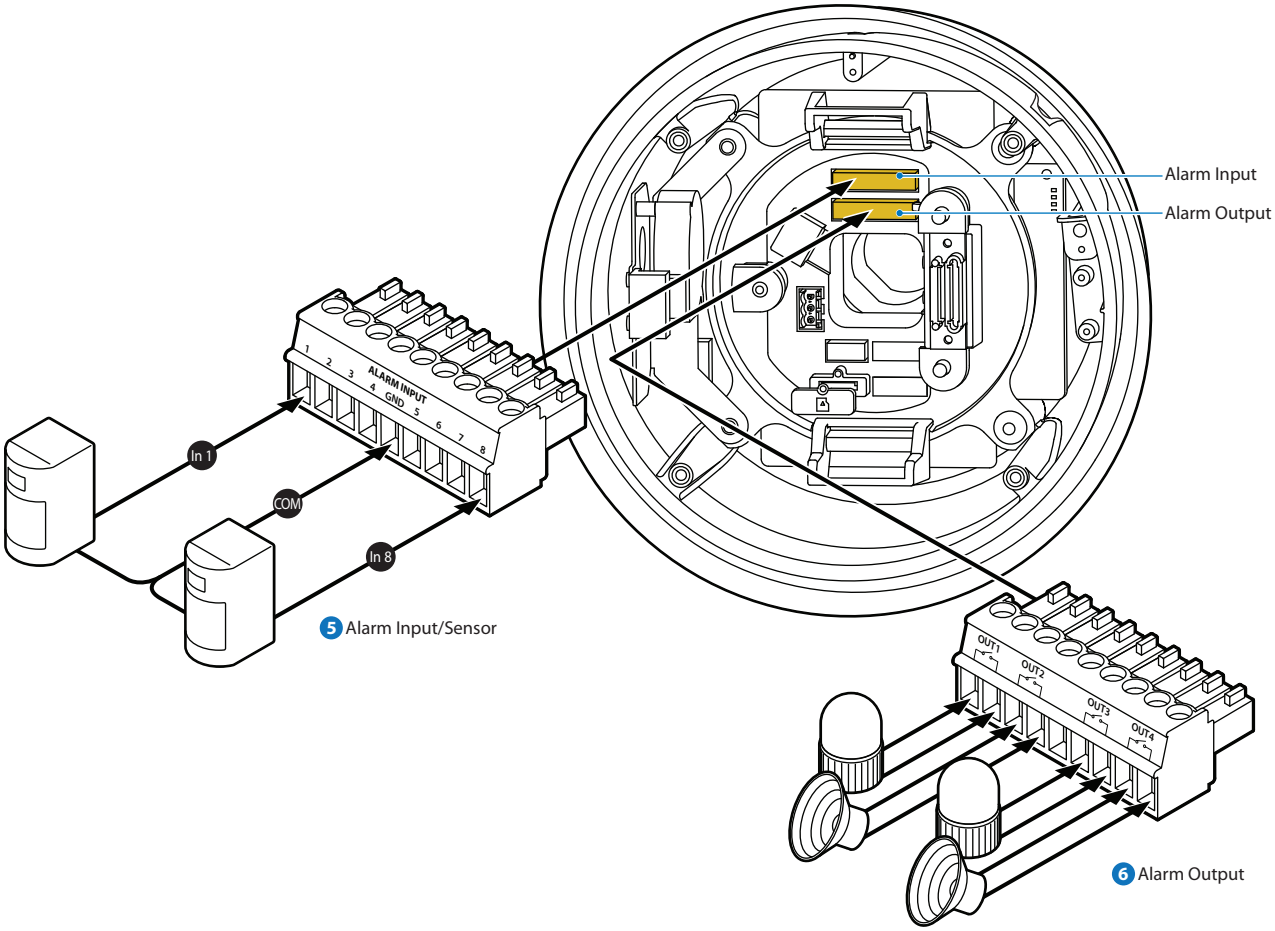
Rate Power	Current Consumption	PoE
AC 24V	Heater Off: 24W • Heater On: 55W	802.3at class 4

※ Coil up the power cable to the Ferrite Core. It will control the electromagnetic waves of Power Cable.

3 RS-485 Communication (DVR/Keyboard)
For PTZ control, connect this line to keyboard and DVR. To control multiple cameras at the same time, RS-485 communication lines of them are connected in parallel as shown below.

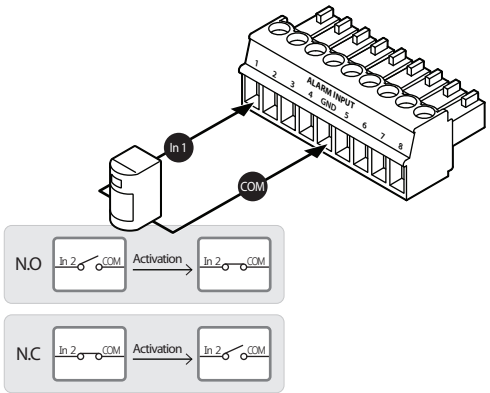


2 Installation - Cabling



5 Sensor Input/Sensor

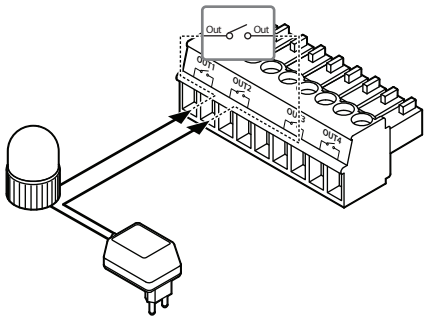
If you want to use alarm input, the types of sensor must be selected in OSD menu. The sensor types are 'Normal Open' and 'Normal Close'. If sensor type is not selected properly, the alarm can be activated reversely.



※ It is noted that short circuit between GND and Input pin means alarm activation.

6 Alarm Output

There are 4 alarm outputs and all of them are relay contact type. Therefore, you do not have to care about polarity, AC/DC, and isolations between channels. Care must be taken for the power capacity of relay contact written above.



3 OSD - Check Points before Operation

Check Points before Operation

1. Before power is applied, please check the cables carefully.
2. The camera ID of the controller must be identical to that of the camera to be controlled. The camera ID can be check in the system information of OSD menu.
3. If your controller supports multi-protocols, the protocol must be changed to match to that of the camera.
4. If you changed camera protocol by changing DIP switch, the change will be effective after you reboot the camera.
5. Since the operation method can be different for each controller available, refer to the manual for your controller if camera cannot be controlled properly.

1 Preset and Pattern Function Pre-check

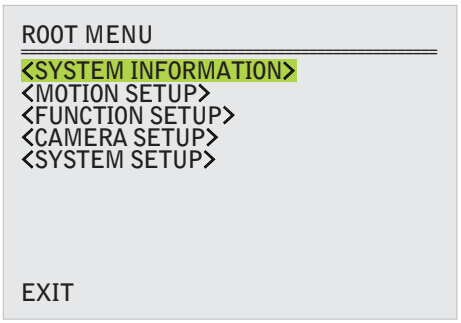
- Check how to operate preset, pattern, scan and group function with keyboard controller/DVR in advance to operate camera function using them. (Refer to your system keyboard manual)

2 Start OSD Menu

Using the OSD menu, preset, pattern, scan, group and alarm input function can be configured for each application.
Enter 'Preset key + 95'.

3 OSD - ROOT MENU & SYSTEM INFORMATION

1



1 ROOT MENU

<SYSTEM INFORAMTION>
Shows information and current configuration.

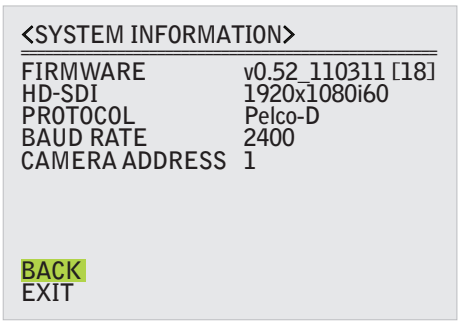
<MOTION SETUP>
Setup for motion related settings.

<FUNCTION SETUP>
Setup for various functions such as preset, scan, pattern, group and schedule.

<CAMERA SETUP>
Configure camera related functions and data.

<SYSTEM SETUP>
Configure for basic system setup.

1



1 SYSTEM INFORMATION

FIRMWARE VER
Shows the current firmware version.

HD-SDI
Shows the current resolution of HD-SDI.

PROTOCOL
Shows the current PTZ control protocol.

BAUD RATE
Shows the current baud rate of the PTZ control.

CAMERA ADDRESS
Shows the current camera ID of the PTZ control.

3 OSD - MOTION SETUP

❶

<MOTION SETUP>

POWER UP ACTION	ON
JOG MAX SPEED	100/SEC
JOG DIRECTION	NORMAL
<ALARM INPUT SETUP>	

BACK
EXIT

'<ALARM INPUT SETUP>' select
and press the 'NEAR' Key

❷

<ALARM INPUT SETUP>

ALARM 1	N.O	NOT USED
ALARM 2	N.O	NOT USED
ALARM 3	N.O	NOT USED
ALARM 4	N.O	NOT USED
ALARM 5	N.O	NOT USED
ALARM 6	N.O	NOT USED
ALARM 7	N.O	NOT USED
ALARM 8	N.O	NOT USED

BACK
EXIT

Select 'Alarm Number'
by move joystick up/down.
And press the 'NEAR' key

❸

<ALARM INPUT SETUP>

ALARM 1	N.O	NOT USED
ALARM 2	N.O	NOT USED
ALARM 3	N.O	NOT USED
ALARM 4	N.O	NOT USED
ALARM 5	N.O	NOT USED
ALARM 6	N.O	NOT USED
ALARM 7	N.O	NOT USED
ALARM 8	N.O	NOT USED

BACK
EXIT

Select 'Alarm Type'
by move joystick up/down.
And move joystick right.

❹

<ALARM INPUT SETUP>

ALARM 1	N.C	NOT USED
ALARM 2	N.O	NOT USED
ALARM 3	N.O	NOT USED
ALARM 4	N.O	NOT USED
ALARM 5	N.O	NOT USED
ALARM 6	N.O	NOT USED
ALARM 7	N.O	NOT USED
ALARM 8	N.O	NOT USED

BACK
EXIT

Select 'Alarm Action'
by move joystick up/down.
And press the 'NEAR' key to save.

❶ MOTION SETUP

Setup the general functions of pan/tilt motions.

PWR UP ACTION ON / OFF
This function enables to resume the last action executed before power down. Most of actions such as preset, pattern, scan and group are available for this function but jog actions are not available to resume.

JOG MAX SPEED 30/SEC ~ 150/SEC
Sets maximum jog speed. Jog speed is inversely proportional to zoom magnification. As zoom magnification goes up, pan/tilt speed goes down.

JOG DIRECTION NORMAL / INVERSE
If you set this to 'NORMAL', the view in the screen is moving same direction with jog tilting. If 'INVERSE' is selected, the view in the screen is moving reversely.

<ALARM INPUT SETUP>
Moves to 'ALARM INPUT ACTION' screen.

❷ ALARM INPUT SETUP

If an external sensor is activated, camera will move to corresponding action.

Alarm Number 1 ~ 8

Alarm Type N.O(Normal Open) / N.C(Normal Close)
- Sets sensor input type.
- Refer page 14 for more detailed information.

Alarm Action NOT USED / HOME / PRESET 1~255 / SCAN 1~8 / PATTERN 1~4 / GROUP 1~8
Assign counter-action to each alarm input. Among 149 actions, choose the action as explained below.

❸ ALARM INPUT SETUP - Type Setup

1) Move joystick up/down to set alarm type.
2) Move joystick right to set alarm action.

❹ ALARM INPUT SETUP - Alarm Action Setup

1) Move joystick up/down to set the action(HOME, PRESET, SCAN, PATTERN, GROUP) and number.
2) Move joystick left/right to move the focus to set alarm type, function name and function number.
3) By pressing near key, save the current setting.

3 OSD - FUNCTION SETUP > PRESET SETUP

❶
```
<FUNCTION SETUP>
<PRESET SETUP>
<SCAN SETUP>
<PATTERN SETUP>
<GROUP SETUP>



BACK
EXIT
```

Select '<PRESET SETUP>' and press the 'NEAR' key

❷
```
<PRESET SETUP>
PRESET NUMBER          1
<EDIT SCENE>
CLEAR PRESET           CANCEL
ALARM OUT              ----



BACK
EXIT
```

After define the 'PRESET NUMBER', select '<EDIT SCENE>' and press the 'NEAR' key

❸
```
<EDIT SCENE>
MOVE TO TARGET POSITION
[NEAR:SELECT/FAR:CANCEL]
```

❶ **FUNCTION SETUP**
Configure 4 special functions with this menu.

❷ **PRESET SETUP**
255 presets from the number 1 to 255 can be assigned excluding preset 95, 131~134, 141~148, 151~158 reserved for menu.

PRESET NUMBER 1 ~ 255
Selects the preset number to edit.

<EDIT SCENE>
Define the current preset scene position(i.e. PTZ).

CLEAR PRESET CANCEL / OK
Deletes current preset data.

ALARM OUT - - - - / 1234
State of four alarm outputs can be freely controlled in conjunction with preset run. The character ' - ' means off state and the number representing each bit means on.
Ex) If it is set to be ' - 2 3 - ', output relay 2, 3 will be on and 1, 4 will be be off, when you run this preset.

❸ **EDIT SCENE**
1) By PTZ controling, move camera to desired position.
2) By pressing the 'NEAR' key, the save current PTZ data.
3) If you want cancel the editing, press the 'FAR' key.

3 OSD - FUNCTION SETUP > SCAN SETUP

❶

```
<FUNCTION SETUP>
<PRESET SETUP>
<SCAN SETUP>
<PATTERN SETUP>
<GROUP SETUP>



BACK
EXIT
```

Select '<SCAN SETUP>' and press the 'NEAR' key

❷

```
<SCAN SETUP>
SCAN NUMBER          1
FIRST POSITION       NOT USED
SECOND POSITION      NOT USED
SCAN SPEED           30/SEC
CLEAR SCAN           CANCEL



BACK
EXIT
```

❷ **SCAN SETUP**

Up to 8 scans are available, which makes the camera to move slowly between two preset positions.

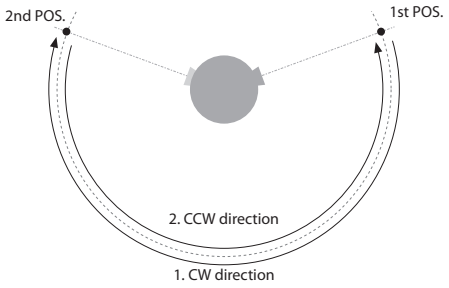
When scan function runs, the camera moves from the preset assigned as the 1st pos. to the preset assigned as the 2nd pos. in CW(Clockwise) direction. Then camera moves from the preset assigned as the 2nd pos. to the preset assigned as the 1st pos. in CCW(Counterclockwise) direction. Then, it continues to move from the 1st pos. to the 2nd pos. back and forth.

If the 1st POS. = the 2nd POS.

In case that the preset assigned as the 1st pos. is same as the preset assigned as the 2nd pos., camera turns on its axis by 360° in CW direction and then it turns on its axis by 360° in CCW direction.

If one preset is not defined between the 1st POS. and the 2nd POS.

If case that a position assigned is 'NOT USED', camera turns on its axis by 360° in CW direction from the preset which is 'NOT USED' and then it turns on its axis by 360° in CCW direction.



SCAN NUMBER	1 ~ 8
Selects the scan number to edit.	
FIRST POSITION	PRESET 1 ~ 255 / NOT USED
Set up the 1st position for scan function.	
※ Undefined preset cannot be assigned as position. If you press 'NEAR' key when the selected undefined preset, the preset will returned to previous position(Available preset or 'NOT USED').	
SECOND POSITION	PRESET 1 ~ 255 / NOT USED
Same as the 1st position setup.	
SCAN SPEED	1/SEC ~ 180/SEC
Sets the scan speed.	
CLEAR SCAN	CANCEL / OK
Deletes the current scan data.	

3 OSD - FUNCTION SETUP > PATTERN SETUP

❶

<FUNCTION SETUP>
<PRESET SETUP>
<SCAN SETUP>
<PATTERN SETUP>
<GROUP SETUP>

BACK
EXIT

Select '<PATTERN SETUP>' and press the 'NEAR' key

❷

<PATTERN SETUP>
PATTERN NUMBER 1
<EDIT PATTERN>
CLEAR PATTERN CANCEL

BACK
EXIT

After define the 'PATTERN NUMBER', select '<EDIT PATTERN>' and press the 'NEAR' key

❸

<EDIT PATTERN>
MOVE TO START POSITION
[NEAR:START/FAR:CANCEL]

After define starting position, press the 'NEAR' key to start recording

❹

<EDIT PATTERN>
[MEMORY]
[NEAR:SAVE/FAR:DELETE]

Memory size is displayed.
To save data, press the 'NEAR' key.

❷ PATTERN SETUP

Pattern function is that a camera memorizes the path (mostly curve path) by joystick of controller for assigned time and revives the path exactly as it memorized.

4 patterns are available and max. 1000 communication commands can be stored in a pattern.

PATTERN NUMBER 1 ~ 4
Select pattern number to edit.

<EDIT PATTERN>
Starts editing pattern.

CLEAR PATTERN CANCEL / OK
Deletes data in the current pattern.

❸ EDIT PATTERN - Select the Position

1) By using joystick, move to the start position with appropriate zoom.
2) To start the pattern recording, press the 'NEAR' or 'ENTER' key.
3) To exit this menu, press the 'FAR' key.

❹ EDIT PATTERN - Records

1) Move the camera with joystick of the controller or run preset function to memorize the path (mostly curve path) in a selected pattern.
2) The total memory size and the rest memory size is displayed in the form of bar.
3) To save data and exit, press the 'NEAR' key.
4) To cancel recording and delete the recorded data, press the 'FAR' key.

3 OSD - FUNCTION SETUP > GROUP SETUP

❶

```
<FUNCTION SETUP>
<PRESET SETUP>
<SCAN SETUP>
<PATTERN SETUP>
<GROUP SETUP>


BACK
EXIT
```

Select '<GROUP SETUP>' and press the 'NEAR' key

❷

```
<GROUP SETUP>
GROUP NUMBER          1
<EDIT GROUP>
CLEAR GROUP           CANCEL


BACK
EXIT
```

After define the 'GROUP NUMBER', select '<EDIT GROUP>' and press the 'NEAR' key

❸

```
<EDIT GROUP>
NO.  ACTION    Num  Dwell    OPT
 1   NONE
 2   NONE
 3   NONE
 4   NONE
 5   NONE

EDIT
SAVE
CANCEL
```

Press the 'NEAR' key to start editing

❹

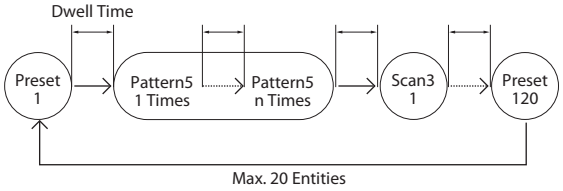
```
<EDIT GROUP>
NO.  ACTION    Num  Dwell    OPT
 1   NONE
 2   NONE
 3   NONE
 4   NONE
 5   NONE

EDIT
SAVE
CANCEL
```

Select function sequence number by move joystick up/down. And press the 'NEAR' key.

❷ GROUP SETUP SCREEN

The group function allows running sequence of presets, pattern and/or scans. Max. 8 group can be stored. Each group can have max. 20 action entities which can be preset, pattern or scan.

Preset speed can be set up and the repeat number of pattern & scan can be set up in group setup. Dwell time between actions can be set up also.



GROUP NUMBER 1 ~ 8
Selects group number to edit.

<EDIT GROUP>
Starts editing group.

CLEAR GROUP CANCEL / OK
Deletes data in the current group.

❸ EDIT GROUP - Initial Screen

Press the 'NEAR' key to start group setup.

NO. 1 ~ 20
Means the sequence of the function in a group.
The functions will be run from lower no. to higher no. by sequence.

ACTION NUM NONE / PRESET 1~255 / PATTERN 1~4 / SCAN 1~8
Select the function.

DWELL 00:03 ~ 04:00 (min:sec)
Sets dwell time between function by moving joystick up/down. If the 'OPT' of pattern/group is set to repeat more than twice, it means the repeat interval.

OPT PRESET: 1~360 / PATTERN & SCAN: 1~255
It represents preset speed (1~360) when preset is selected. It should be the number of repetition (1~255) when pattern or scan is selected for 'ACTION'.

❹ EDIT GROUP – Select Function Sequence

Note that max. 20 functions are allowed in a group.
Move cursor up/down and press the 'NEAR' key to set up.

❺ EDIT GROUP - Assign Function

Move cursor to the 'NO.' to assign the function, click the enter button to set up. Select the function by clicking up/down button.

3 OSD - FUNCTION SETUP > GROUP SETUP

5

<EDIT GROUP>

NO.	ACTION	Num	Dwell	OPT
1	NONE			
2	NONE			
3	NONE			
4	NONE			
5	NONE			

EDIT
SAVE
CANCEL

Move joystick up/down to select action.
and move joystick right.

6

<EDIT GROUP>

NO.	ACTION	Num	Dwell	OPT
1	PRESET	1	00:02	1
2	NONE			
3	NONE			
4	NONE			
5	NONE			

EDIT
SAVE
CANCEL

After define items,
press the 'NEAR' key

7

<EDIT GROUP>

NO.	ACTION	Num	Dwell	OPT
1	PRESET	1	00:02	1
2	NONE			
3	NONE			
4	NONE			
5	NONE			

EDIT
SAVE
CANCEL

Press the 'FAR' key,
and move joystick down
to select 'SAVE'

8

<EDIT GROUP>

NO.	ACTION	Num	Dwell	OPT
1	PRESET	1	00:02	1
2	NONE			
3	NONE			
4	NONE			
5	NONE			

EDIT
SAVE
CANCEL

Press the 'NEAR' key
to save current data.

5 EDIT GROUP - Assign Function
Move cursor to the 'NO.' to assign the function, press the 'NEAR' key to set up. Select the function by moving joystick up/down.

6 EDIT GROUP - Assign Function
Move cursor left/right to select items and move cursor up/down to change each value.

7 EDIT GROUP - Select Function Sequence
e.g.) If 'PRESET 1' is not defined at 'ROOT MENU>FUNCTION SETUP>PRESET SETUP', then the 'ACTION' will be automatically changed to 'NONE'.

<EDIT GROUP>

NO.	ACTION	Num	Dwell	OPT
1	PRESET	1	00:02	1
2	NONE			
3	NONE			

Press the 'NEAR' key

<EDIT GROUP>

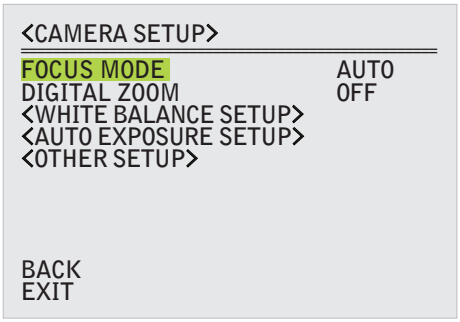
NO.	ACTION	Num	Dwell	OPT
1	NONE			
2	NONE			
3	NONE			

※ The function undefined cannot be set as action.

8 EDIT GROUP - Saves the Setting
After finishing setting up all actions, place cursor on 'SAVE'. Then, press the 'NEAR' key to save current data.

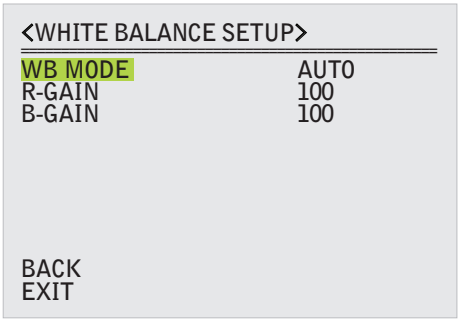
3 OSD - CAMERA SETUP

1



'<ALARM INPUT SETUP>' select and press the 'NEAR' Key

2



1 CAMERA SETUP

Setup the general functions of zoom camera module.

FOCUS MODE	AUTO / MANUAL

Sets the camera focus mode.

- **AUTO:** This mode exchanges the focus mode automatically between manual focus mode and auto focus mode. Manual focus mode activates in preset operation and auto focus mode activates when jog operation starts.
- **MANUAL:** With manual mode at presets, focus data is memorized in each preset in advance and camera calls focus data in correspondence with presets as soon as camera arrives at a preset.

DIGITAL ZOOM	ON / OFF

Sets digital zoom function to 'ON' or 'OFF'. If this is set to 'OFF', optical zoom function runs but zoom function stops at the end of optical zoom magnification.

<WHITE BALANCE SETUP>
Starts 'WHITE BALANCE SETUP' setup screen.

<AUTO EXPOSURE SETUP>
Starts 'AUTO EXPOSURE SETUP' setup screen.

<OTHER SETUP>
Starts 'OTHER SETUP' setup screen.

2 WHITE BALANCE SETUP

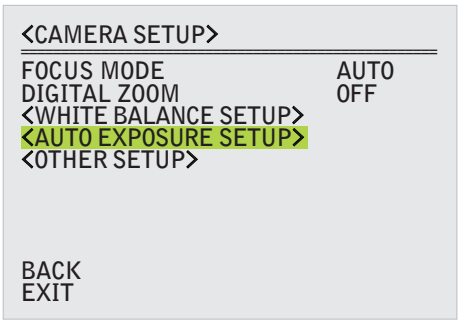
WB MODE	AUTO / MANUAL / ONE PUSH> / OUTDOOR / INDOOR

- **AUTO**: Camera perform white balance automatically.
- **Manual**: 'R/B-Gain' level can be set up manually.
- **ONE PUSH**: WB is executed once on the scene you designated.
- **INDOOR**: WB will be done under assumption of Indoor illumination.
- **OUTDOOR**: WB will be done under assumption of Sun light.

RED ADJUST	0 ~ 255
BLUE ADJUST	0 ~ 255

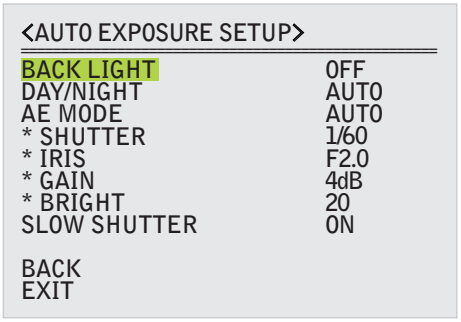
3 OSD - CAMERA SETUP > AUTO EXPOSURE SETUP

❶



'<AUTO EXPOSURE SETUP>' select and press the 'NEAR' Key

❷



❷ AE SETUP

BACK LIGHT ON / OFF
Sets the backlight compensation.

DAY/NIGHT AUTO / DAY / NIGHT
'AUTO' exchanges day/night.

AE MODE AUTO / MANUAL / IRIS / SHUTTER / BRIGHT

- **AUTO:** Full auto mode for AE function
- **MANUAL:** In manual mode. 'IRIS', 'GAIN', 'SHUTTER SPEED' can be changed in this mode.
- **IRIS:** Iris priority mode. You can change iris while others are adjusted automatically.
- **SHUTTER:** Shutter priority mode. Shutter speed can be changed while while others are adjusted automatically.
- **BRIGHT:** In this mode, you can assign AE value in terms of brightness.

IRIS LEVEL CLOSE / F1.8 / F2.0 / F2.4 / F2.8 / F3.4 / F4.0 / F4.8 / F5.6 / F6.8 / F8.0 / F9.6 / F11 / F14 / F16 / F19 / F22 / F26 (18 steps)
Works when 'AE MODE' is 'MANUAL' or 'IRIS' mode.

GAIN LEVEL -3 / 0 / 3 / 6 / 9 / 12 / 15
Works when 'AE MODE' is 'MANUAL'.
Enhances image brightness automatically in case that luminance level of image signal is too low.

SHUTTER SPD 1/2 ~ 1/10000 (21 steps)
Works when 'AE MODE' is 'MANUAL' or 'SHUTTER' mode.

BRIGHTNESS 0~31 (32 steps)
Works when 'AE MODE' is 'BRIGHT'.
Adjusts brightness of images. Iris, shutter speed and gain are adjusted automatically in correspondence with this value.

SLOW SHUTTER ON / OFF
Turn On/Off slow shutter function. If you turn this on, the shutter speed is slowed down to intensify image by accumulating small light in the extremely dark environment. This function is effective only in Full Auto AE mode.

3 OSD - CAMERA SETUP > OTHER SETUP

❶

<CAMERA SETUP>

FOCUS MODE	AUTO
DIGITAL ZOOM	OFF
<WHITE BALANCE SETUP>	
<AUTO EXPOSURE SETUP>	
<OTHER SETUP>	

BACK
EXIT

'<OTHER SETUP>' select and press the 'NEAR' Key

❷

<OTHER SETUP>

EXP COMPENSATION	0
APERTURE	6
GAMMA	NORMAL
PICTURE EFFECT	OFF
WIDE-D	OFF
IR CORRECTION	OFF
CAM GAIN	20dB
HR MODE	ON
NOISE REDUCTION	3
HIGH SENSITIVITY	ON

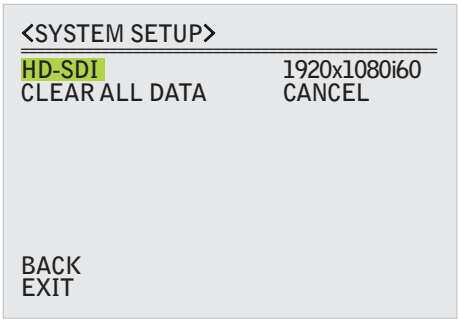
BACK
EXIT

❷ **OTHER SETUP**

EXP COMPENSATION Default is '0/0dB'.	7 (GAIN:-10.5dB) ~ +7 (GAIN:+10.5dB) (15 Steps)
APERTURE	0 ~ 15
GAMMA	NORMAL / GAMMA1 / S-LOW / S-MID / S-HIGH
PICTURE EFFECT	OFF / NEGATIVE / B&W
WIDE-D	ON / OFF
IR CORRECTION	ON / OFF
CAM GAIN	6 dB ~ 20 dB
HR MODE	ON / OFF
NOISE REDUCTION	OFF / 1 ~ 5
HIGH SENSITIVITY	ON / OFF

3 OSD - SYSTEM SETUP

❶



❷ **SYSTEM SETUP**

HD-SDI	1280x720p50 / 1280x720p60 / 1920x1080i50 / 1920x1080i60 / 1920x1080p25 / 1920x1080p30

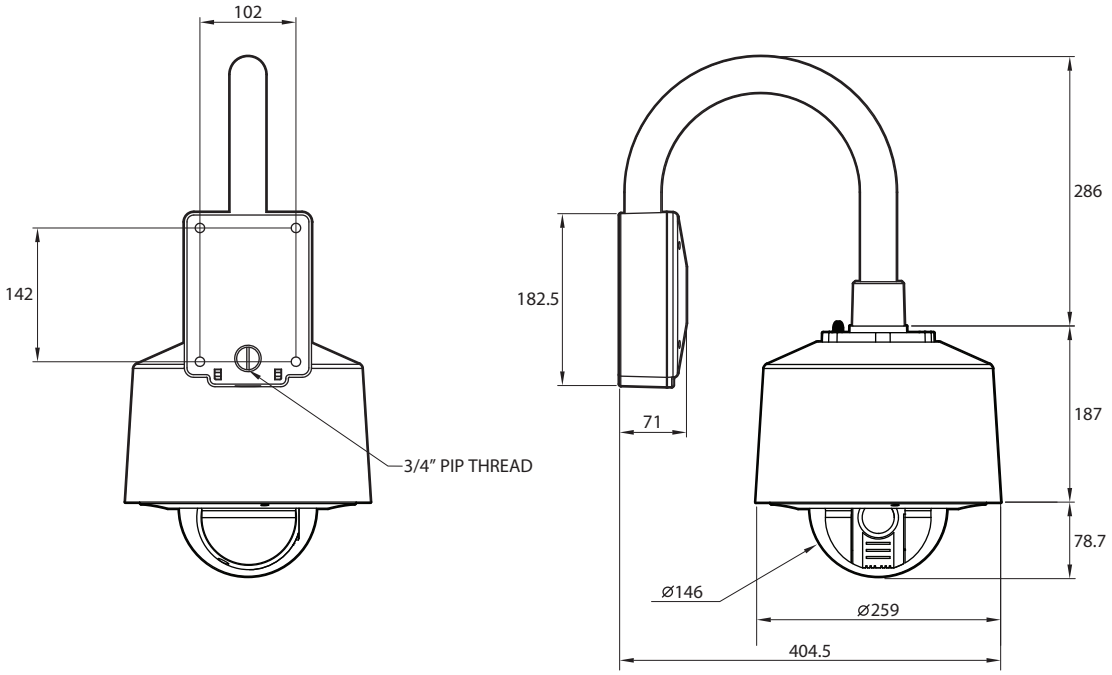
Select the resolution of HD-SDI.

CLEAR ALL DATA	CANCEL / OK

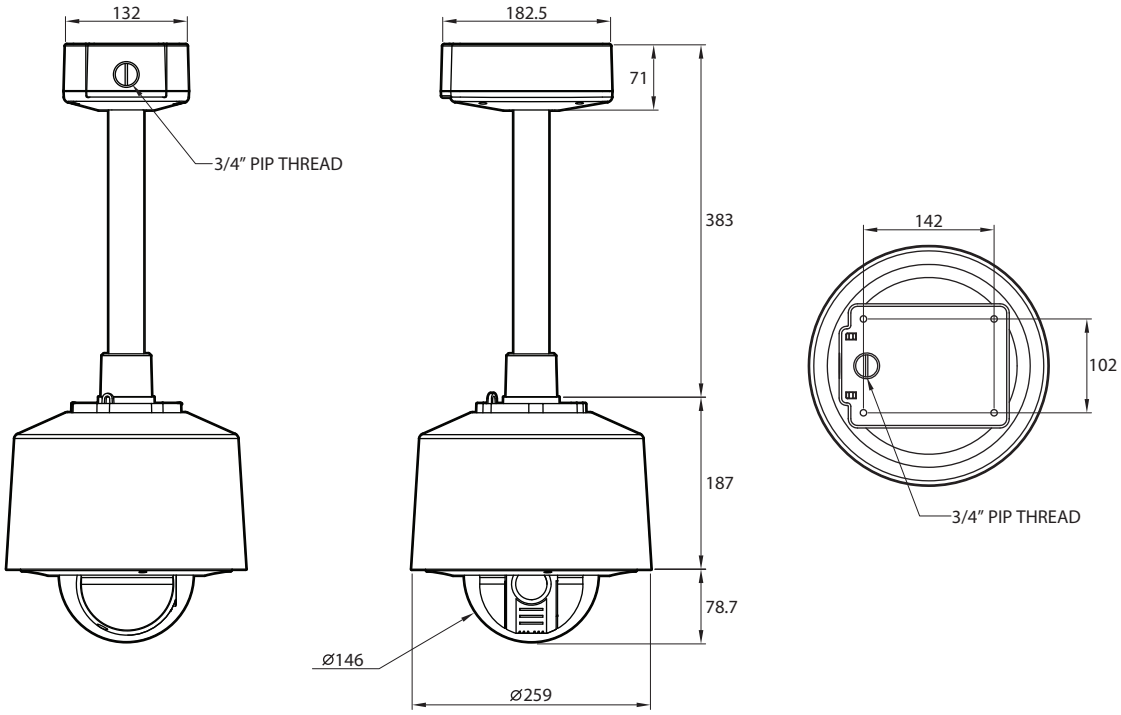
Deletes all configuration data such as display, camera, motion setup and so on.

4 Specifications - Dimension

Unit: mm



Wall Mount Bracket



Ceiling Mount Bracket